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| 09/824,863 | 04/02/2001 | David S. Christie | 5500-62700 | 9992 |

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| EXAMINER | |
|---|---|
| PAN, DANIEL H | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2183 | |

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Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/824,863 | CHRISTIE, DAVID S. | |
| | Examiner | Art Unit | |
| | Daniel Pan | 2183 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *02 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *21-30* is/are allowed.

6)☒ Claim(s) *1,4-6,8,12,13,15 and 16* is/are rejected.

7)☒ Claim(s) *2,3,7,9-11,14 and 17-20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2,3,4*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 1-30 are presented for examination.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1,4, 12, are rejected under 35 U.S.C. 103(a) as being unpatentable over Rozenshein et al. (6,418,527) in view of Gotou et al. (4,679,140).

3. As to claims 1,4, Rozenshein disclosed a system comprising at least :

a) a register file (see fig.2) including an more than one register sets (see registers banks in col.7, lines 61-67, col.8, lines 1-14);

b) an execution core ( see the execution unit DALU with other functional elements in the core in fig.1) couplet to the register file and receive signal [register bank selection field] indicating the operating mode of CPU, the execution core was configured to fetch instruction (see the fetching of the instructions in col.5, lines 63-67, col.6, lines 1-52), and configured to respond to instruction by accessing at least the register set [register bank] if the signal [selection field ] indicated the CPU operating in a register set mode [particular register bank] and the instruction included a prefix [prefix] needed to aces the register set (see the prefix used to indicate which register bank was being selected in col.7, lines 61-67, col.8, lines 1-14).

4. Rozenshein did not specifically teach his register file including the standard register set and extended registers sets as claimed though it taught a plurality of register sets (register banks, see col.7, lines 61-67, col.8, lines 1-14). However, Gotou disclosed a register file including the a standard set of registers (see the 32 bit registers) and extended set of registers (e.g. see the 64 bit registers in col.3, lines 31-34, 50-58). It would have been obvious to one of ordinary skill in the art to use Gotou in Rozenshein for including standard register set (e.g. 32 bit) and extended register set (e.g. the 64 bit) in Rozenshein because the use of Gotou could provide the storage capability of Rozenshein to accept different type of registers portions, thereby maximizing the storage structure of Rozenshein, and it could be readily achieved by reconfiguring the standard and extended register sets of Gotou into Rozenshein with modified read/write parameters, such as the register type and register width, so the specific standard and extended register sets of Gotou could be recognized by Rozenshein, and because Rozenshein also taught that register file more than a single register file could be used (e.g. see col. 5, lines 3-8), which was an indication of the applicability of an extra or extended register set in addition to the original or a standard set register in Rozenshein in order to enhance the storage capability, and in doing so ,provided a motivation. Rozenshein is used as primary reference because it showed clearly the prefix field and the fetch of the instructions.

5. Claims 5,6,8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rozenshein et al. (6,418,527) in view of Gotou et al. (4,679,140) as applied to claim 1 above, and further in view of Bluhm (5,630,149).

6. As to claims 5,6, neither Rozenshein nor Gotou specifically showed the eight 32 bit general purpose registers by x86 as claimed. However, Bluhm disclosed eight 32 bit general purpose registers by x86 (e.g. see col.5, lines 51-54). It would have been obvious to one of ordinary skill in the art to use Bluhm in Rozenshein as claimed because the use of Bluhm could provide the ability of Rozenshein's storage to adapt to particular type of processor architecture, and therefore, increasing the compatibility of the system, and it could readily done by defining the architectural registers of Bluhm into Rozenshein's configuration file so that the specific registers set of the given processor architecture, such as the x86, could be recognized by Rozenshein to provide the enhanced compatibility, and for the above reasons , provided a motivation.

7. As to claim 8, Bluhm also taught that x86 was variable instruction set (e.g. see col.3, lines 10-11).

8. Claims 13,15 , 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rozenshein et al. (6,418,527) in view of Gotou et al. (4,679,140) and Bluhm (5,630,149).

9. As to claims 13,15, Rozenshein did not specifically teach his register file including the standard register set and extended registers sets as claimed though it taught a plurality of register sets (register banks). However, Gotou disclosed a register file including the a standard set of registers (see the 32 bit registers) and extended set of registers (e.g. see the 64 bit registers in col.3, lines 31-34, 50-58). It would have

been obvious to one of ordinary skill in the art to use Gotou in Rozenshein for including standard register set (e.g. 32 bit) and extended register set (e.g. the 64 bit) in Rozenshein because the use of Gotou could provide the storage capability of Rozenshein to accept different type of registers portions, thereby maximizing the storage structure of Rozenshein, and it could be readily achieved by reconfiguring the standard and extended register sets of Gotou into Rozenshein with modified read/write parameters, such as the register type and register width, so the specific standard and extended register sets of Gotou could be recognized by Rozenshein, and because Rozenshein also taught that register file more than a single register file could be used (e.g. see col. 5, lines 3-8), which was an indication of the applicability of an extra or extended register set in addition to the original or a standard set register in Rozenshein in order to enhance the storage capability, and in doing so ,provided a motivation. Rozenshein is used as primary reference because it showed clearly the prefix field and the fetch of

te execution core.

10. Rozenshein did not specifically showed the eight 32 bit general purpose registers by x86 as claimed. However, Bluhm disclosed eight 32 bit general purpose registers by x86 (e.g. see col.5, lines 51-54). It would have been obvious to one of ordinary skill in the art to use Bluhm in Rozenshein as claimed because the use of Bluhm could provide the ability of Rozenshein's storage to adapt to particular type of processor architecture, and therefore, increasing the compatibility of the system, and it could readily done by defining the architectural registers of Bluhm into Rozenshein's

configuration file so that the specific registers set of the given processor architecture, such as the x86, could be recognized by Rozenshein to provide the enhanced compatibility, and for the above reasons , provided a motivation.

11. As to claim 16, Bluhm disclosed the EAX, EBX, EDX, ESP, EBP, ESI, EDI registers (e.g. see col.5, lines 51-54).

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Cloud et al. (5,655,125) is cited for the basic teaching of the general purpose register set (e.g. see fig.3).

13. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the combined features of the number of the standard registers is less or equal the general purpose registers, and the number of the extended registers is greater than the general purpose registers.

14. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the

combined features of the sufficient information to identify the standard register set and the additional information to identify the selected extended register set.

15. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the extended register set including general purpose registers of the stand register set and eight additional 32-bit registers not defined by the x86 architecture.

16. Claims 9 , 10 (see comment below) are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the extended byte comprises an extended register key field indicating whether or not the register prefix byte includes information needed to access the one extended register. Claim 10 is recited as being dependent from claim 1. However, the examiner believes that it was meant to be dependent from claim 9, instead, because the feature of the extended register key field and value in claim 10 can only find a proper antecedent basis in claim 9. Applicant is suggested to provide correction in the next response. For the examination purpose , claim 10 is assumed to be dependent form claim 9.

17. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims. None of the prior art of record further teaches the combined features of the control register for indicating whether or not the extended register mode is globally enabled, and the flag register for indicated whether or not the extended register mode is enabled by the current process, and the generation of the signal indicating operating CPU in extended mode if the extended register mode is globally enabled and enabled by the current process.

18. Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the combined features of the sufficient information to identify the standard register set and the additional information to identify the selected extended register set.

19. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the extended register set including general purpose registers of the stand register set and eight additional 32-bit registers not defined by the x86 architecture.

20. Claims 18,19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the extended byte comprises an extended register key field indicating whether or not the register prefix byte includes information needed to access the one extended register.

21. Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record further teaches the combined feature of the control register for indicating whether or not the extended register mode is globally enabled, and the flag register for indicated whether or not the extended register mode is enabled by the current process, and the generation of the signal indicating the operating CPU in extended mode if the extended register mode is globally enabled and enabled by the current process.

22. Claims 21-30 are allowable over the art of record for reciting the combined features of the register file including the standard register set and extended registers set, the number of the extended registers is greater than the number of the general purpose registers, the width of the extended register is greater than the width of the general purpose registers, the access of the extended register if the signal indicated the extended mode, the instruction included the prefix to access the extended register, and the prefix portion indicated the entire contents of the extended register was to be accessed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Pan whose telephone number is 703 305 9696. The examiner can normally be reached on M-F from 8:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan, can be reached on 703 305 9712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*21 Century Strategic Plan*

DANIEL H. PAN
PRIMARY EXAMINER
GROUP